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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/614,906

07/07/2003

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05/18/2007

EXAMINER

AFREMOVA, VERA

ART UNIT

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1657

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/614,906	STAMETS, PAUL EDWARD	
	<b>Examiner</b>	<b>Art Unit</b>	
	Vera Afremova	1657	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 07 March 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 27,28,33-39,42-44,46,48 and 97-99 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 27, 28, 33-39, 42-44, 46, 48 and 97-99 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

Claims 27, 28, 33-39, 42-44, 46, 48 and 97-99 as amended (3/07/2007) are pending and under examination.

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 27, 28, 33-39, 42, 43, 48, 97-99 remain rejected under 35 U.S.C. 102(b) as being anticipated by US 4,589,225 (Stensaas) as explained in the prior office action and repeated herein.

Claims are directed to a composition that is a delivery system for mycotechnologies as intended to benefit plant growth wherein the composition comprises 1) a “cardboard” box material, 2) a fungal inoculant of saprophytic and mycorrhizal fungi selected from the group consisting of spores, mycelium, powdered mushrooms and combinations thereof; and 3) seeds. Some claims are further directed to seeds of various plants. Some claims are further drawn to incorporation of liquids, glues, adhesives, etc. into the composition. Some claims are further drawn to the use of cardboard material that is “infused” with the fungal inoculant. Some claims are further drawn to the use of cardboard material that is corrugated or pressed.

US 4,589,225 (Stensaas) discloses a composition that is a delivery system for mycotechnologies intended to benefit and to fertilize crops and other plants. The disclosed

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composition comprises 1) a “primary packaging” material, 2) a fungal inoculant or “propagules of MF” microorganisms and 3) seeds; for example: see at col. 4, lines 1-9.

The disclosed seeds belong to generic plants including crops and woody plants within the broadest meaning of the pending claims 33 and 48.

The disclosed fungal inoculant or “propagules of MF” include spores and mycelium or hyphae (col. 5, line 17; col. 8, line 40). The disclosed “MF” microorganisms are generic mycorrhizal fungi that include the ecto- and endo- forms that are capable to colonize root surfaces and root insides (col.1, lines 30-40) and, thus, the “MF” microbial inoculant as disclosed falls within the broadest reasonable meaning of the claimed terms “saprophytic” and “mycorrhizal fungi” of the claims 1 and 98.

The “primary packaging” is a “cardboard” box material such as cellulosic fibers (col. 5, lines 23-26) that is shaped into desired forms including corrugated cardboard-type packages (col. 10, lines 24-33) within the meaning of the claims 1, 36 and 99, for example. The disclosed composition is provided with an outer cover or envelope (col.4, lines 30-33) and, thus, the fungal inoculant and seeds “are packaged separately from the cardboard box” materials within the meaning of the claim 28.

The disclosed delivery system might be dry, moist or wet (col. 4, line 29) and, thus, it comprises liquid that is present or that is removed within the meaning of the pending claims 34 and 38-41. The disclosed delivery system incorporates glues, adhesives, etc.; for example: see col. 8, lines 48-49.

The cited patent teaches the concept of cardboard box material being “infused” with the fungal inoculant (fig. 7, for example) since the fungal spores and mycelium are incorporated into

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the cellulosic support matrix that is shaped into strips or cardboard packages (col. 10, lines 26-33).

Thus, the cited patent US 4,589,225 (Stensaas) teaches a delivery system for mycotechnologies that comprises identical components as required for the claimed product.

Thus, the cited patent US 4,589,225 (Stensaas) anticipates the claimed invention.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 27, 28, 33-39, 42-44, 46, 48 and 97-99 remain rejected under 35 U.S.C. 103(a) as being unpatentable over US 4,589,225 (Stensaas) taken with US 5,022,182 (Anderson) and Ineichen et al. ("Changes in the fungus-specific, soluble-carbohydrate pool during rapid and synchronous ectomycorrhiza formation of *Picea abies* with *Pisolithus tinctorius*". Mycorrhiza. 1992, 2(1), pages 1-7) as explained in the prior office action and repeated herein.

Claims 27, 28, 33-39, 42, 43, 48, 97-99 as above. Some claims are further drawn to the presence of additional "educational" materials and rescue kit components made from or packaged in cardboard materials.

The cited patent US 4,589,225 (Stensaas) is relied upon as explained above for the disclosure of a product such as a mycotechnologie delivery system intended to benefit plant growth and to fertilize crops and other plants that comprises cellulosic matrix used for making

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cardboard packages, fungal inoculant of mycorrhizal microorganisms and plant seeds. The microorganisms and plant seeds combined with cardboard materials are generic as disclosed by US 4,589,225 (Stensaas). However, the reference by Ineichen et al. demonstrates that mycorrhizal microorganism such as *Pisolithus tinctorius* is capable to colonize cardboard materials and develop ectomycorrhiza on root systems of plants such as *Picea abies*, for example: see abstract.

US 4,589,225 (Stensaas) is lacking particular disclosure about the presence of additional “educational” materials and rescue kit components made from or packaged in cardboard materials. However, US 5,022,182 (Anderson) demonstrates incorporation of informational tags and indicators fabricated from cardboard (col. 8, lines 14-17) into the delivery systems of seeds and plant fertilizers (Fig. 1-9) including beneficial microorganisms (col. 9, lines 17-19).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the claimed invention was made to use cardboard materials and boxes for delivery of mycotechnologie systems as taught, suggested and adequately demonstrated by the cited prior art. Thus, the claimed invention as a whole was clearly *prima facie* obvious, especially in the absence of evidence to the contrary.

The claimed subject matter fails to patentably distinguish over the state art as represented by the cited references. Therefore, the claims are properly rejected under 35 USC § 103.

### ***Response to Arguments***

Applicant's arguments filed 3/07/2007 have been fully considered but they are not persuasive.

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1. With regard to the claim rejection under 35 U.S.C. 102(b) as being anticipated by US 4,589,225 (Stensaas) Applicant argues that the cited patent does not teaches the use of 2 or both “saprophytic” fungal inoculant and a “mycorrhizal” fungal inoculant (response page 8, par. 3). However, the instant claims as written are drawn to the use a single fungal inoculant or “a fungal inoculant” selected from Markush group as claimed. The pending claims are not limited to any specific and mutually exclusive representatives of “saprophytic” and “mycorrhizal” fungal inoculants. The cited patent clearly discloses the use of “MF” fungi that include both ecto- and endo- forms and that are capable to colonize root surfaces and root insides (col.1, lines 30-40) and, thus, the “MF” microbial inoculant as disclosed falls within the broadest reasonable meaning of the claimed terms “saprophytic” and “mycorrhizal fungi” of the claims 1 and 98. Moreover, the “mycorrhizal” fungi that colonize the plant roots and utilize fixed carbon from the plant photosynthates are also “saprophytic” fungi since they obtain nutrients from non-living matter in soil including decaying organic debris in soil, for example: organic phosphorous compounds (US 4,589,225 at col.1, lines 43-50 and col. 2, line 37).

2. With regard to the claim rejection under 35 U.S.C. 103(a) Applicant argues that as being that a) the cited US 4,589,225 (Stensaas) does not teaches the use of 2 or both “saprophytic” and “mycorrhizal” inoculants, that b) none of the cited references uses the word “box” and, thus, box s capable to holding other goods or educational kit and that c) Ineichen et al. teaches away from the claimed invention since it discloses inoculation of plant seedlings rather than plant seed with fungi (response page 9).

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These arguments are not found persuasive because US 4,589,225 discloses the use of a generic fungal inoculate "MF" that is both "saprophytic" and "mycorrhizal" fungal inoculant within the broadest reasonable meaning of the claims. Furthermore, US 4,589,225 clearly suggests the use of both "MF" and "AB" microorganisms wherein "AB" belongs to actinomycetes (see US'225 at col. 2, lines 20-21 and at col. 1, line 32) that are saprophytes obtaining nutrients from non-living organic matter.

Further, the term "box" or "cardboard box" is taught, suggested or at the very least encompassed by US 4,589,225 by teaching the use of a "container" (col. 4, line 31) made from "cardboard" (col.10, line 31).

Furthermore, the teaching of Ineichen et al. is mostly relied upon to demonstrate that the claimed "cardboard" material is biodegradable material and it can be a substrate for growth for fungal inoculant within the meaning of the instant claims, for example: see claims 43 and 98.

Thus, the cited references are in the same field of endeavor and they seek to solve the same problems as the instant application and claims, and one of skill in the art is free to select components available in the prior art, *In re Winslow*, 151 USPQ 48 (CCPA, 1966).

The claimed subject matter fails to patentably distinguish over the state art as represented by the cited references. Therefore, the claims are properly rejected under 35 USC § 103.

No claims are allowed.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).



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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vera Afremova whose telephone number is (571) 272-0914. The examiner can normally be reached from Monday to Friday from 9.30 am to 6.00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jon P. Weber, can be reached at (571) 272-0925.

The fax phone number for the TC 1600 where this application or proceeding is assigned is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology center 1600, telephone number is (571) 272-1600.

Vera Afremova

AU 1657

May 15, 2007



VERA AFREMOVA

PRIMARY EXAMINER